

## PCT/IT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

WOODCRAFT, David, Charles  
Brookes Batchellor  
102-108 Clerkenwell Road  
London EC1M 5SA  
ROYAUME-UNI

Date of mailing (day/month/year) 05 July 2001 (05.07.01)	<b>IMPORTANT NOTIFICATION</b>  International filing date (day/month/year) 12 September 2000 (12.09.00)
Applicant's or agent's file reference DCW/VSW	
International application No. PCT/GB00/03490	

1. The following indications appeared on record concerning:	
<input type="checkbox"/> the applicant	<input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative
Name and Address WOODCRAFT, David, Charles Brookes & Martin High Holborn House 52-54 High Holborn London WC1V 6SE United Kingdom	State of Nationality
	State of Residence
	Telephone No. 020 7242 9631
	Facsimile No. 020 7831 0586
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:	
<input type="checkbox"/> the person <input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence	
Name and Address WOODCRAFT, David, Charles Brookes Batchellor 102-108 Clerkenwell Road London EC1M 5SA United Kingdom	State of Nationality
	State of Residence
	Telephone No. 020-7253-1563
	Facsimile No. 020-7253-1214
3. Further observations, if necessary:	
4. A copy of this notification has been sent to:	
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  I. Britel  Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

**PCT**  
**NOTIFICATION OF ELECTION**  
(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 28 May 2001 (28.05.01)	<b>Applicant's or agent's file reference</b> DCW/VSW
<b>International application No.</b> PCT/GB00/03490	<b>Priority date (day/month/year)</b> 16 September 1999 (16.09.99)
<b>International filing date (day/month/year)</b> 12 September 2000 (12.09.00)	
<b>Applicant</b> SHERWOOD, Paul et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

09 April 2001 (09.04.01)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Olivia TEFY Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference F145422	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IL00/00591	International filing date (day/month/year) 24 SEPTEMBER 2000	Priority date (day/month/year) 24 SEPTEMBER 1999
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant COMVERSE NETWORK SYSTEMS LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 0 sheets.

## 3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 17 APRIL 2001	Date of completion of this report 08 APRIL 2002
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer <i>Peggy Hancock</i> NORMAN MICHAEL WRIGHT Telephone No. (703) 308-0000

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL00/00591

## I. Basis of the report

1. With regard to the **elements** of the international application:\*

☒ the international application as originally filed

☒ the description:

pages 1-7, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_

☒ the claims:

pages 8-9, as originally filed

pages NONE, as amended (together with any statement) under Article 19

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_

☒ the drawings:

pages 1-3, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_

☒ the sequence listing part of the description:

pages NONE, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of \_\_\_\_\_

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☒ the description, pages NONE

☒ the claims, Nos. NONE

☒ the drawings, sheets/fig 1-3

5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL00/00591

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. statement

Novelty (N)

Claims NONE

YES

Claims 1-7

NO

Inventive Step (IS)

Claims NONE

YES

Claims 1-7

NO

Industrial Applicability (IA)

Claims 1-7

YES

Claims NONE

NO

### 2. citations and explanations (Rule 70.7)

Claims 1-7 lacks novelty under PCT Article 33(2) as being anticipated by Radia et al., U.S. Pat. No. 5,848,233, hereinafter '233.

As to claims 1-7, '233 substantially teaches the claimed invention of a method and apparatus for dynamic packet filtering comprising: a method for presorting a plurality of rules for filtering, selecting a characteristic, associating a rule with said characteristic, partially analyzing packets, selecting a rule, applying a rule, presorting rules, a source/destination address, associating profiles, and privileges. See (abs., figs. 1-9, background, col. 2, lines 55 et seq., ANCS, SMS, DHCP, router, col. 3, lines 1-65, col. 4, lines 1-30, col. 6, lines 5 et seq., and cols. 7-8.

----- NEW CITATIONS -----

NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IL00/00591

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**CLASSIFICATION:**

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): G06F 1/24, 11/30 ; H04L 9/00, and US Cl.: 713/153, 154, 200, 201, 202; 709/225, 231, 238

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference DCW/VSU	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/03490	International filing date (day/month/year) 12/09/2000	Priority date (day/month/year) 16/09/1999
International Patent Classification (IPC) or national classification and IPC A61K31/00		
Applicant BRITANNIA PHARMACEUTICALS LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 09/04/2001	Date of completion of this report 13.12.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Langer, A Telephone No. +49 89 2399 7809 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/03490

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-3 as originally filed

**Claims, No.:**

1-12 as received on 02/11/2001 with letter of 31/10/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/03490

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

## III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 11, 12 as to IA.

because:

☒ the said international application, or the said claims Nos. 11, 12 as to IA relate to the following subject matter which does not require an international preliminary examination (*specify*):  
**see separate sheet**

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-10

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/03490

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No: Claims

2. Citations and explanations  
see separate sheet

**INTERNATIONAL PRELIMINARY  
 EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/03490

**Re item iii**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

Claims 11 and 12 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(i) PCT).

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents. If not indicated otherwise, the relevant passages are those cited in the international search report.

- D1: DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; HORIKIRI, KAZUYA ET AL: 'Local irritation test on the intraarticular administration of dibucaine hydrochloride injection (Neo Vitacain) in rabbits' retrieved from STN Database accession no. 117:226235 XP002161981 & OYO YAKURI (1992), 44(3), 303-7 ,
- D2: GB-A-1 145 623 (EUSTACHE CECIL ) 1969
- D3: HILLS, B. A.: 'Remarkable anti-wear properties of joint surfactant', ANNALS OF BIOMEDICAL ENGINEERING, , 1995, vol. 23, no. , pages 112 to 115
- D4: CH 682 803 A (GEORG KUNOVITS DR) 30 November 1993 (1993-11-30)

2. The present application relates to the use of pantothenic acid for the treatment of joint inflammation or pain.
3. **Novelty (Art. 33 (2) PCT)**

Document D2 discloses the use of pantothenic acid together with cysteine in compositions for parenteral administration. Document D4 discloses the intramuscular administration of pantothenic acid for the treatment of rheumatic

diseases, which implicitly includes inflammation and pain of joints.

The indicated administration of the present application "into the region of a joint" is not explicitly disclosed by the prior art cited. "Injection in the region of an inflamed or painful joint" is a rather vague definition of the route of administration, which could also include intramuscular injection. This route of administration can however be limited from the prior art (document D4) as the skilled person would not consider to carry out an intramuscular injection near to an inflamed joint, unless he aims at a local treatment. This feature is not indicated in document D4, the document refers to a systemic treatment. Therefore, in spite of the vague definition of the administration, this indication can serve as a delimiting feature over the prior art.

None of the prior art documents indicates local administration of pantothenic acid for the treatment of joint pain. In the contrary, the prior art (e.g. documents D4) rather teaches away from such a route of administration, since it explains the effect of pantothenic acid by its induction of increased glucocorticoid secretion, an effect, which necessitates systemic administration.

**Claims 1-12** therefore appear novel and inventive in terms of Art. 33 (2) (3) PCT.

#### **4. Industrial Applicability (Art. 33 (4) PCT)**

For the assessment of the present **claims 1-12** on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.

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1**CLAIMS**

1. Use of pantothenic acid or a derivative thereof in the preparation of a medicament for administration by injection into the region of an inflamed or painful joint for alleviation of said inflammation or pain.
2. Use according to claim 1, wherein the derivative is a salt of pantothenic acid.
3. Use according to claim 2, wherein the salt is the calcium salt.
4. Use according to any one of the preceding claims, wherein the medicament comprises an aqueous solution of pantothenic acid or a derivative thereof.
5. Use according to any one of the preceding claims, wherein the medicament is co-administered with a local anaesthetic.
6. Use according to any one of the preceding claims, wherein the medicament is co-administered with cysteine or glucosamine.
7. Use according to any one of the preceding claims, wherein the medicament is co-administered with a surface-active phospholipids (SAPL).
8. Use according to claim 7, wherein the SAPL comprises dipalmitoylphosphatidyl choline.
9. Use according to claim 7 or 8, wherein the SAPL comprises phosphatidyl glycerol.
10. Use according to any one of claims 1 to 9 in which the joint is affected by a disorder selected from tennis elbow, housemaid's knee, frozen shoulder, inflamed knee joints and hips and back pain associated with inflammation or restricted movement in the spinal vertebrae.

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2

11. Method of alleviating pain in an inflamed or painful joint of a mammal, comprising administration of pantothenic acid or a derivative thereof by injection into the region of an inflamed or painful joint to obtain alleviation of said inflammation or pain.

5

12. Method according to claim 11 in which the joint is affected by a disorder selected from tennis elbow, housemaid's knee, frozen shoulder, inflamed knee joints and hip and back pain associated with inflammation or restricted movement in the spinal vertebrae.

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>DCW/VSW</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/03490</b>	International filing date (day/month/year) <b>12/09/2000</b>	(Earliest) Priority Date (day/month/year) <b>16/09/1999</b>
Applicant <b>BRITANNIA PHARMACEUTICALS LIMITED et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

**MEDICAMENTS CONTAINING PANTOTHENIC ACID FOR THE TREATMENT OF INFLAMMATORY JOINT DISEASE**

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PC 00/03490

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 A61K31/195 A61P19/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE CHEMABS 'Online!            CHEMICAL ABSTRACTS SERVICE, COLUMBUS,            OHIO, US;            HORIKIRI, KAZUYA ET AL: "Local irritation            test on the intraarticular administration            of dibucaine hydrochloride injection (Neo            Vitacain) in rabbits"            retrieved from STN            Database accession no. 117:226235            XP002161981            abstract            &amp; OYO YAKURI (1992), 44(3), 303-7 ,</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1-5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

2 March 2001

Date of mailing of the international search report

16/03/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Veronese, A



## INTERNATIONAL SEARCH REPORT

International Application No

PCT/SB 00/03490

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
D2 X	<p>DATABASE BIOSIS 'Online!  BIOSCIENCES INFORMATION SERVICE,  PHILADELPHIA, PA, US; 1981  MOISEENOK A G ET AL: "ANTI INFLAMMATORY  AND COENZYMIC ACTIVITY OF PANTOTHENIC-ACID  DERIVATIVES IN ADJUVANT ARTHRITIS"  Database accession no. PREV198274077858  XP002161982  abstract  &amp; KHIMIKO-FARMATSEVTICHESKII ZHURNAL,  vol. 15, no. 6, 1981, pages 76-81,  ISSN: 0023-1134</p>	1-4
33 X	<p>GB 1 145 623 A (EUSTACHE CECIL ) 1969  page 1, column 2, line 43-57  page 1, column 2, line 80-84</p>	1-4, 6
D4 Y	<p>CH 682 803 A (GEORG KUNOVITS DR)  30 November 1993 (1993-11-30)  page 1, column 1, line 29-35  page 2, column 2, line 7-11  claims 1-3; figure 4</p>	1-4
D5 Y	<p>DATABASE CHEMABS 'Online!  CHEMICAL ABSTRACTS SERVICE, COLUMBUS,  OHIO, US;  YURGILEVICH, V. P. ET AL: "Some  prerequisites to the use of pantothenic  acid preparations in the complex therapy  of rheumatism"  retrieved from STN  Database accession no. 91:32794  XP002161983  abstract  &amp; KHIM., BIOKHIM. FUNKTS. PRIMEN.  PANTOTENOVOI KISLOTY, MATER. GRODN. SIMP.,  4TH (1977), 167-9. EDITOR(S): MOISEENOK,  A. G. PUBLISHER: IZD. NAUKA TEKHNKA,  MINSK, USSR. ,</p>	1-4
1.6 Y	<p>BEERS M. H. ET AL. : "The Merck Manual"  April 1999 (1999-04) , MERK LABORATORIES ,  N.J. (USA) XP002161979  page 445 -page 447  page 446, column 2, last paragraph</p>	1-4
7 Y	<p>FERNANDEZ-PALAZZI F ET AL:  "INTRAARTICULAR DEXAMETHASONE IN ADVANCED  CHRONIC SYNOVITIS IN HEMOPHILIA"  CLINICAL ORTHOPAEDICS, LIPPINCOTT,  PHILADELPHIA, PA, US,  no. 343, 1997, pages 25-29, XP000865956  ISSN: 0095-8654  the whole document</p>	1-4
2	<p>---</p> <p>---  -/--</p>	

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 00/03490

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	BOLLOW M ET AL: "CT-GUIDED INTRAARTICULAR CORTICOSTEROID INJECTION INTO THE SACROILIAC JOINTS IN PATIENTS WITH SPONDYLOARTHROPATHY: INDICATION AND FOLLOW-UP WITH CONTRAST-ENHANCED MRI" JOURNAL OF COMPUTER ASSISTED TOMOGRAPHY, US, NEW YORK, NY, vol. 20, no. 4, 1996, pages 512-521, XP000881197 the whole document	1-4
Y	GB 2 286 528 A (WOODWARD ROBERT JOHN) 23 August 1995 (1995-08-23) page 1, line 23 page 3, line 11-18 claim 9	1-4
A	US 4 568 547 A (HERSCHLER ROBERT J) 4 February 1986 (1986-02-04) example VI	7
A	MARY EAGLESON: "Concise Encyclopedia Chemistry" 1994, WALTER DE GRUYTER BERLIN, NEW YORK XP002161980 page 775-776	1-4

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Information on patent family members

International Application No

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[GB/GB]; 2 Devonshire Place, London W1N 2PA (GB).  
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(74) Agent: **WOODCRAFT, David, Charles; Brookes & Martin**, High Holborn House, 52-54 High Holborn, London WC1V 6SE (GB).

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(71) Applicant (*for all designated States except US*): **BRI-TANNIA PHARMACEUTICALS LIMITED** [GB/GB]; 41-51 Brighton Road, Redhill, Surrey RH1 6YS (GB).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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**WO 01/19359 A2**

(54) Title: **MEDICAMENTS CONTAINING PANTOTHENIC ACID**

(57) Abstract: A medicament and procedure is disclosed for alleviation of inflammation or pain in the region of a human or animal joint. The procedure involves injecting pantothenic acid or a derivative thereof into the vicinity of the affected joint.

### **MEDICAMENTS CONTAINING PANTHOTHENIC ACID**

This invention relates to medicaments and their use in the alleviation of inflammation and pain in joints.

Pain or loss of movement in joints is a common occurrence, particularly among the elderly or those who have suffered damage to cartilage, bone surfaces or ligaments.

Standard methods of treatment include the administration of corticosteroids by injection into the site of the inflammation. However, relief tends to be temporary and long term use carries a number of contraindications.

Pantothenic acid (sometimes known as vitamin B5) and its salts have been used as a dietary supplement and for treatment of bronchial asthma, hay-fever, sinusitis and neurodermatitis.

It has now been found that pantothenic acid is of value in reducing inflammation when injected into the region of an affected joint.

According to the present invention there is provided use of pantothenic acid or a derivative thereof in the preparation of a medicament for administration by injection into the region of a joint for alleviation of inflammation or pain.

The pantothenic acid may be used in the form of a salt, e.g. the calcium salt. Pantothenic acid is a naturally occurring substance in plant and animal tissue. A particularly rich source is royal jelly obtainable from honey bee colonies. It may be used in its naturally occurring state or as a chemically pure material. Synthetic methods of preparations include those described in US Patent Nos. 2,780,645; 2,845,456 and 2,934,428. The free acid and its salts are optionally active and the dextro-rotatory isomer is preferred.

Conveniently, a medicament is prepared by dissolving the active ingredient, i.e. pantothenic acid or a derivative in a suitable solvent, e.g. water, and injecting the solution into the affected joint. The initial treatment may cause some pain and it may, therefore, be desirable to co-administer a local anaesthetic, e.g. lignocaine, at the same time or shortly before the injection of the pantothenic acid.

Other physiologically active materials may be co-administered, e.g. cysteine or glucosamine.

It may also be desirable to co-administer within the same treatment regime, a surface active phospholipid (SAPL) such as dipalmitoyl-phosphatidyl choline (DPPC) or phosphatidyl glycerol (PG). Preferably, a mixture of DPPC and PG is employed. A preferred protein-free SAPL composition comprising a blend of DPPC and PG is available from Britannia Pharmaceuticals Ltd of Brighton Road, Redhill under the trade mark 'Alec'. SAPL's such as 'Alec' are believed to act as a lubricant in joints, taking over to some extent the function of synovial fluid.

The medicaments of this invention may be used in the treatment of several conditions associated with inflammation or reduced movement of joints. Examples include tennis elbow, housemaid's knee, frozen shoulder, inflamed knee joints and hips and back pain associated with inflammation or restricted movement in the spinal vertebrae.

A typical dose is about 2 mls of an aqueous solution of about 500 mg of the acid salt. The medicament is injected directly into the site of the inflamed joint. A programme of injections is generally desirable in which dosages similar to that indicated above are given at intervals of a few days to about one week. Reduced

inflammation and increased freedom of movement is usually noticeable after about a week from the initial injection.

**CLAIMS:-**

1. Use of pantothenic acid or a derivative thereof in the preparation of a medicament for administration by injection into the region of a joint for alleviation of inflammation or pain.
2. Use according to claim 1 wherein the derivative is a salt of pantothenic acid.
3. Use according to claim 2 wherein the salt is the calcium salt.
4. Use according to any one of the preceding claims wherein the medicament comprises an aqueous solution of pantothenic acid or a derivative thereof.
5. Use according to any one of the preceding claims wherein the medicament includes a local anaesthetic.
6. Use according to any one of the preceding claims wherein the medicament is co-administered with cysteine or glucosamine.
7. Use according to any one of the preceding claims wherein the medicament is co-administered with a surface-active phospholipid (SAPL).
8. Use according to claim 7 wherein the SAPL comprises dipalmitoylphosphatidyl choline.
9. Use according to claim 7 or 8 wherein the SAPL comprises phosphatidyl glycerol.



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West Wickham, Kent BR4 9DJ (GB).

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(74) Agent: **WOODCRAFT, David, Charles;** Brookes  
Batchellor, 102-108 Clerkenwell Road, London EC1M  
5SA (GB).

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(71) Applicant (*for all designated States except US*): **BRI-  
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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **SHERWOOD, Paul**  
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*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*



**WO 01/019359 A3**

(54) Title: MEDICAMENTS CONTAINING PANTOTHENIC ACID FOR THE TREATMENT OF INFLAMMATORY JOINT DISEASE

(57) Abstract: A medicament and procedure is disclosed for alleviation of inflammation or pain in the region of a human or animal joint. The procedure involves injecting pantothenic acid or a derivative thereof into the vicinity of the affected joint.

## INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 A61K31/195 A61P19/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	<p>DATABASE CHEMABS 'Online!            CHEMICAL ABSTRACTS SERVICE, COLUMBUS,            OHIO, US;            HORIKIRI, KAZUYA ET AL: "Local irritation            test on the intraarticular administration            of dibucaine hydrochloride injection (Neo            Vitacain) in rabbits"            retrieved from STN            Database accession no. 117:226235            XP002161981            abstract            &amp; OYO YAKURI (1992), 44(3), 303-7 ,</p> <p style="text-align: center;">--- -/-</p>	1-5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Veronese, A

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/03490

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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X	<p>DATABASE BIOSIS 'Online!  BIOSCIENCES INFORMATION SERVICE,  PHILADELPHIA, PA, US; 1981  MOISEENOK A G ET AL: "ANTI INFLAMMATORY  AND COENZYMIC ACTIVITY OF PANTOTHENIC-ACID  DERIVATIVES IN ADJUVANT ARTHRITIS"  Database accession no. PREV198274077858  XP002161982  abstract  &amp; KHIMIKO-FARMATSEVTICHESKII ZHURNAL,  vol. 15, no. 6, 1981, pages 76-81,  ISSN: 0023-1134</p>	1-4
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Y	<p>BEERS M. H. ET AL. : "The Merck Manual"  April 1999 (1999-04) , MERK LABORATORIES ,  N.J. (USA) XP002161979  page 445 -page 447  page 446, column 2, last paragraph</p>	1-4
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International Application No

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Y	GB 2 286 528 A (WOODWARD ROBERT JOHN) 23 August 1995 (1995-08-23) page 1, line 23 page 3, line 11-18 claim 9	1-4
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